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May 1976

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16. ABSTRACT
Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

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NATIONAL EUTROPHICATION SURVEY

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REPORT

ON

POMPTON LAKES

PASSAIC COUNTY

NEW JERSEY

EPA REGION II

WORKING PAPER No. 373

WITH THE COOPERATION OF THE

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

AND THE

NEW JERSEY NATIONAL GUARD

MAY 1976

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to freshwater lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point source discharge reduction and nonpoint source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's freshwater lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by the U.S. Environmental Protection Agency and to augment plans implementation by the states.

ACKNOWLEDGMENTS

The staff of the National Eutrophication Survey (Office of Research and Development, U.S. Environmental Protection Agency) expresses sincere appreciation to the New Jersey Department of Environmental Protection for professional involvement and to the New Jersey National Guard for conducting the tributary sampling phase of the Survey.

Douglas Clark, Chief of the Bureau of Water Quality Planning and Management, Mr. Frank Takacs, New Jersey National Eutrophication Survey Coordinator, Principal Environmental Specialist, and Robert Kotch, Senior Environmental Engineer, provided invaluable lake documentation and counsel during the Survey, reviewed the preliminary reports, and provided critiques most useful in the preparation of this Working Paper series.

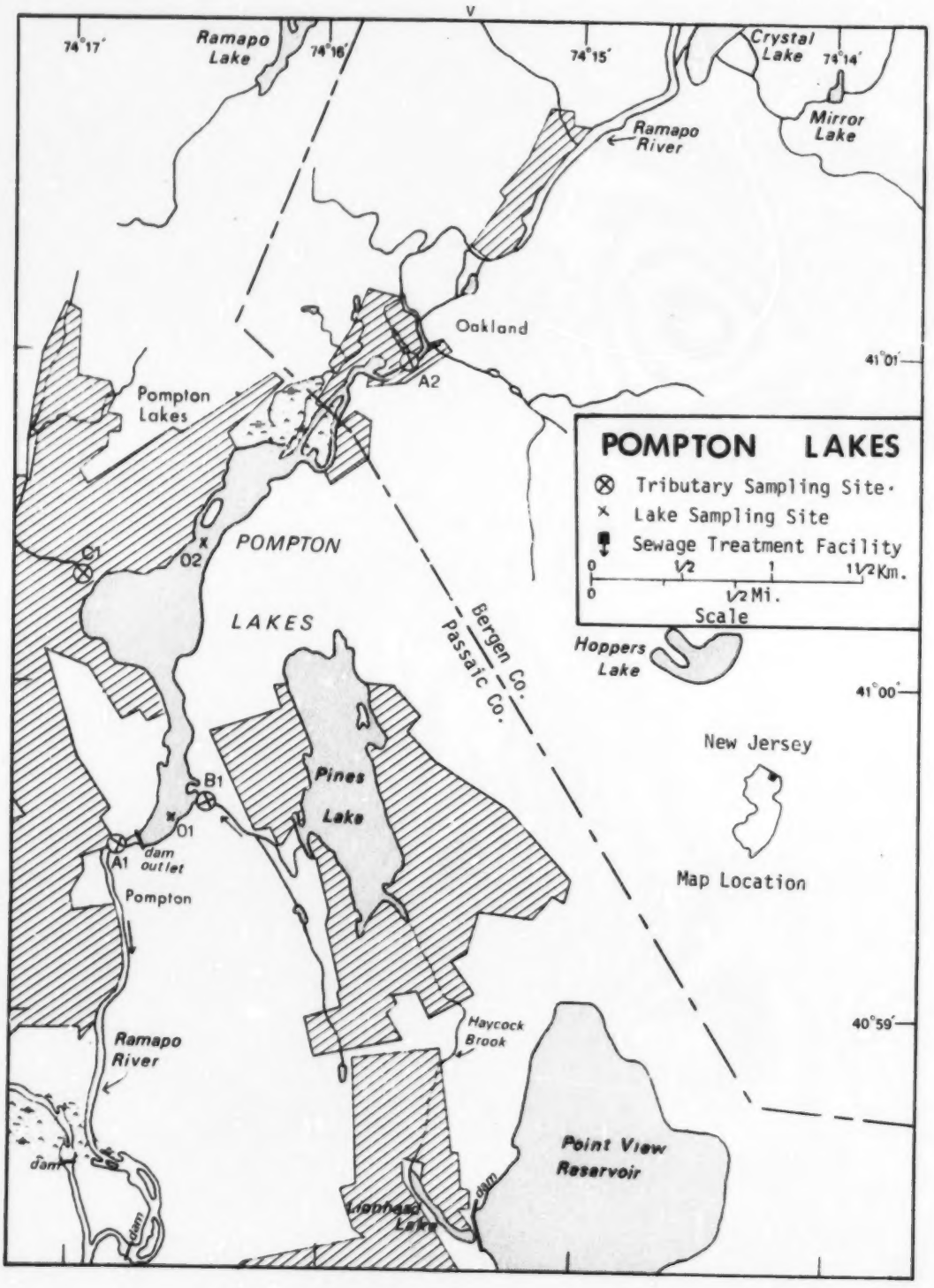
Major General William R. Sharp, Former Chief of Staff, Major General Wilfred G. Menard, Jr., Chief of Staff, and Project Officer Colonel Herbert D. Ruhlin, who directed the volunteer efforts of the New Jersey National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF NEW JERSEY

LAKE NAME	COUNTY
Budd Lake	Morris
Duhernal Lake	Middlesex
Farrington Lake	Middlesex
Greenwood Lake	Passaic, N.J.; Orange, N.Y.
Lake Hopatcong	Morris, Sussex
Lake Musconetcong	Morris, Sussex
Oradell Reservoir	Bergen
Paulinskill Lake	Sussex
Pinecliff Lake	Passaic
Pompton Lakes	Passaic
Spruce Run Reservoir	Hunterdon
Union Lake	Cumberland
Wanaque Reservoir	Passaic


74°17'
Ramapo Lake
74°16'
74°15'
Crystal Lake
74°14'
Mirror Lake
Ramapo River
Oakland
41°01'
A2
Pompton Lakes
POMPTON LAKES
C1
O2
Bergen Co.
Passaic Co.
Hoppers Lake
41°00'
New Jersey
Map Location
B1
O1
A1
dam outlet
Pines Lake
Pompton
Ramapo River
Haycock Brook
40°59'
dam
dam
Point View Reservoir
dam
Lioness Lake
POMPTON LAKES
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
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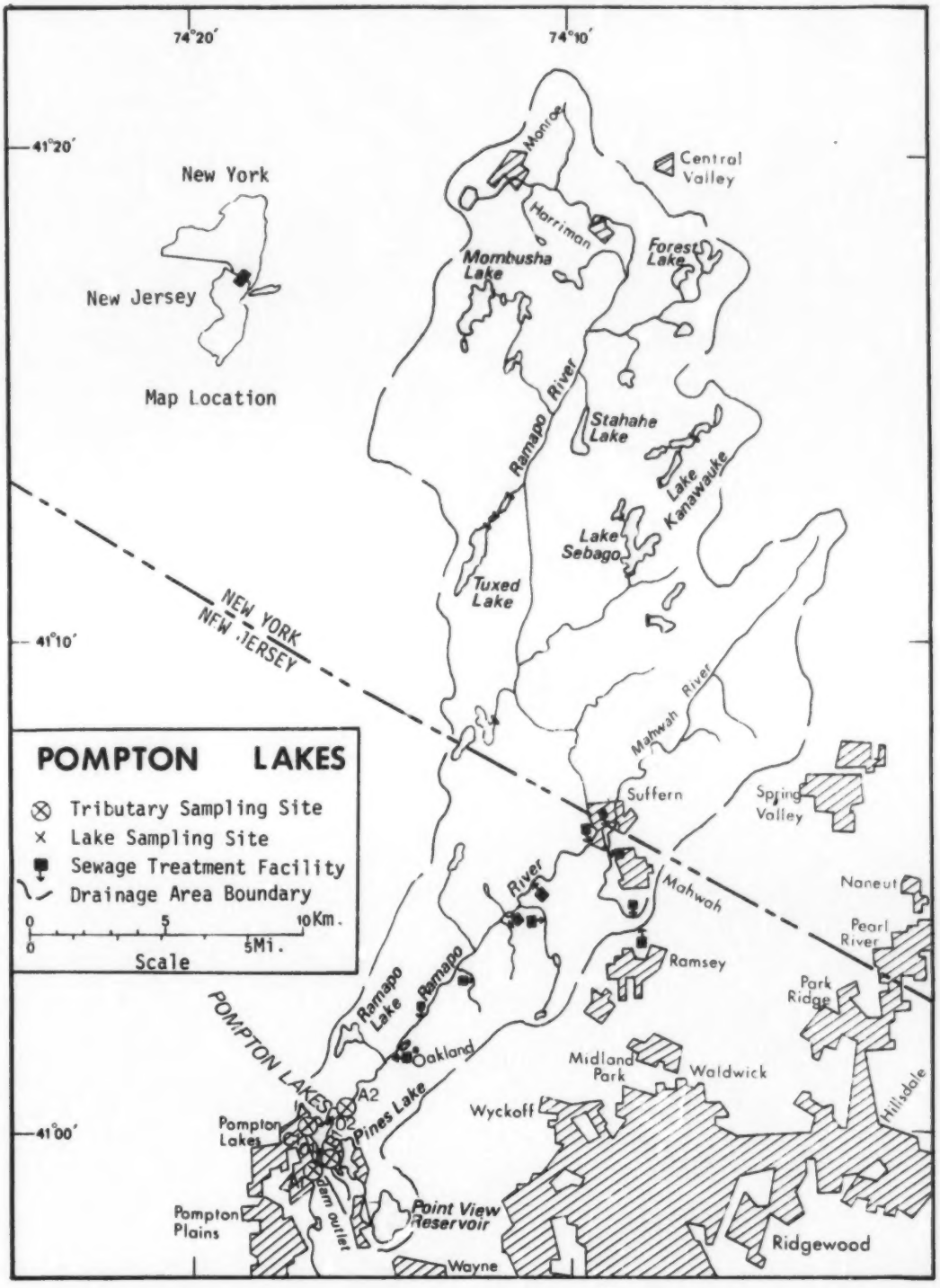
0 1/2 Mi.
Scale


74°20'
74°10'
41°20'
41°10'
41°00'
New York
New Jersey
Map Location
NEW YORK
NEW JERSEY
Monroe
Central Valley
Harriman
Mombusha Lake
Forest Lake
Ramapo River
Stahahe Lake
Lake Kanawauke
Lake Sebago
Tuxed Lake
Mahwah River
Suffern
Spring Valley
Mahwah
Naneut
Pearl River
Ramsey
Park Ridge
Ramapo Lake
Ramapo
Oakland
Midland Park
Waldwick
Wyckoff
Hillsdale
Pines Lake
Pompton Lakes
Pompton Plains
Point View Reservoir
Wayne
Ridgewood
POMPTON LAKES
A1
A2
A3
A4
A5
A6
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A39
A40

POMPTON LAKES, NEW JERSEY

STORET NO. 3410

I. CONCLUSIONS

A. Trophic Condition:

Based on Survey data and field observations, Pompton Lakes is considered eutrophic. The lake is characterized by high concentrations of total phosphorus, low Secchi disc transparency and high potential for primary production as measured by algal assay control yield. Survey limnologists reported abundant aquatic macrophytes. Chlorophyll a values ranged from a low in the spring of 5.4 µg/l to a high of 58.9 µg/l in the fall.

The lake has a record of occasional herbicide applications in the past. Ketelle and Uttormark (1971) recommended partial dredging and the removal of nutrient sources for the rehabilitation of Pompton Lakes.

B. Rate-Limiting Nutrient:

Algal assay results indicate that Pompton Lakes is limited by available phosphorus. Spikes with phosphorus, or phosphorus and nitrogen simultaneously resulted in increased assay yields.

The ratio of mean total available inorganic nitrogen to mean orthophosphorus (N/P) further substantiates these results.

C. Nutrient Controllability:

1. Point Sources -

The mean annual phosphorus contribution from known point sources was estimated to be 28.5% of the total load reaching Pompton Lakes during the sampling year. However, the mean annual nutrient exports for the Ramapo River (Section D, page 16) were substantially higher than what would be expected for this area. It is likely that point sources above the lake in New York significantly contribute to the phosphorus loading of Pompton Lakes (page 14).

The present loading of 47.89 g $P/m^2/yr$ is about 13 times greater than the loading proposed by Vollenweider (Vollenweider and Dillon, 1974) as "dangerous" (eutrophic). It should be noted that the applicability of Vollenweider's model is doubtful for lakes with such short hydraulic retention times. Nevertheless, the above loading is excessive and reduction of non-point phosphorus loading as well as all point sources would be required to substantially improve the water quality of Pompton Lakes.

2. Nonpoint Sources -

The mean annual phosphorus load from nonpoint sources was estimated to be 71.5% of the total load reaching Pompton Lakes. Measured tributaries accounted for 71.2%, and ungaged tributaries accounted for 0.3%. The Ramapo River was estimated to contribute 70.5% of this measured load; however, as discussed, this high background loading is probably due to the contributions of unmeasured point sources upstream.

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS

Lake and drainage basin characteristics are itemized below. Lake surface area and mean depth were provided by the State of New Jersey; tributary flow data were provided by the New Jersey District Office of the U.S. Geological Survey (USGS). Outlet drainage area includes the lake surface area. Mean hydraulic retention time was obtained by dividing the lake volume by the mean flow of the outlet. Precipitation values are estimated by methods as outlined in National Eutrophication Survey (NES) Working Paper No. 175. A table of metric/English conversions is included as Appendix A.

A. Lake Morphometry:

1. Surface area: 0.83 km^2.
2. Mean depth: 1.8 meters.
3. Maximum depth: 5.8 meters.
4. Volume: 1.494×10^6 m^3.
5. Mean hydraulic retention time: 2.0 days.

B. Tributary and Outlet (see Appendix B for flow data):

1. Tributaries -

Name	Drainage area(km^2)	Mean flow (m^3/sec)
A(2) Ramapo River	388.5	7.96
B(1) Unnamed Stream	10.8	0.14
C(1) Unnamed Stream	4.6	0.05
Minor tributaries and immediate drainage -	9.6	0.13
Totals	413.5	8.28
2. Outlet - A(1) Ramapo River	414.4	7.83

C. Precipitation:

1. Year of sampling: 122.9 cm.

2. Mean annual: 156.4 cm.

III. LAKE WATER QUALITY SUMMARY

Pompton Lakes was sampled three times during the open-water season of 1973 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from two stations on the lake and from a number of depths at each station (see maps, pages v and vi). During each visit, depth-integrated samples were collected from each station for chlorophyll a analysis and phytoplankton identification and enumeration. During the first visit, an 18.9-liter depth-integrated sample was composited for algal assays. Maximum depths sampled were 3.7 meters at Station 1 and 1.5 meters at Station 2. For a more detailed explanation of NES methods, see NES Working Paper No. 175.

The results obtained are presented in full in Appendix C and are summarized in III A for waters at the surface and at the maximum depth for each site. Results of the phytoplankton counts and chlorophyll a determinations are included in III B. Results of the limiting nutrient study are presented in III C.

POMPTON LAKES
STORET CODE 3410

PHYSICAL AND CHEMICAL CHARACTERISTICS

PARAMETER	(4/17/73) S*** = 2 N*	RANGE	MEDIAN	MAX DEPTH RANGE (METERS)	(7/22/73) S*** = 2 N*	RANGE	MEDIAN	MAX DEPTH RANGE (METERS)	(10/ 2/73) S*** = 2 N*	RANGE	MEDIAN	MAX DEPTH RANGE (METERS)
TEMPERATURE (DEG CENT)												
0.-1.5 M DEPTH	4	12.6- 12.8	12.7	0.0- 1.2	4	21.0- 22.1	21.7	0.0- 1.5	3	18.3- 18.8	18.6	0.0- 1.5
MAX DEPTH**	2	12.5- 12.6	12.5	0.9- 3.4	2	21.0- 21.3	21.1	1.5- 3.7	2	17.9- 18.6	18.2	0.0- 2.7
DISSOLVED OXYGEN (MG/L)												
0.-1.5 M DEPTH	2	10.0- 11.1	10.5	0.9- 1.2	2	5.8- 7.2	6.5	1.5- 1.5	2	13.2- 14.4	13.8	0.0- 1.5
MAX DEPTH**	2	10.0- 11.0	10.5	0.9- 3.4	2	3.2- 7.2	5.2	1.5- 3.7	2	10.0- 13.2	11.6	0.0- 2.7
CONDUCTIVITY (UMHOS)												
0.-1.5 M DEPTH	4	180.- 190.	190.	0.0- 1.2	4	178.- 182.	179.	0.0- 1.5	3	580.- 625.	600.	0.0- 1.5
MAX DEPTH**	2	190.- 198.	194.	0.9- 3.4	2	178.- 198.	188.	1.5- 3.7	2	600.- 625.	613.	0.0- 2.7
PH (STANDARD UNITS)												
0.-1.5 M DEPTH	4	7.1- 7.4	7.2	0.0- 1.2	4	7.0- 7.2	7.1	0.0- 1.5	3	8.8- 9.2	8.9	0.0- 1.5
MAX DEPTH**	2	7.3- 7.4	7.3	0.9- 3.4	2	7.0- 7.2	7.1	1.5- 3.7	2	8.2- 8.8	8.5	0.0- 2.7
TOTAL ALKALINITY (MG/L)												
0.-1.5 M DEPTH	4	34.- 37.	37.	0.0- 1.2	4	48.- 49.	49.	0.0- 1.5	3	69.- 76.	71.	0.0- 1.5
MAX DEPTH**	2	36.- 37.	37.	0.9- 3.4	2	48.- 58.	53.	1.5- 3.7	2	76.- 77.	77.	0.0- 2.7
TOTAL P (MG/L)												
0.-1.5 M DEPTH	4	0.054-0.060	0.056	0.0- 1.2	4	0.101-0.135	0.112	0.0- 1.5	3	0.058-0.101	0.070	0.0- 1.5
MAX DEPTH**	2	0.040-0.060	0.050	0.9- 3.4	2	0.135-0.142	0.138	1.5- 3.7	2	0.073-0.101	0.087	0.0- 2.7
DISSOLVED ORTHO P (MG/L)												
0.-1.5 M DEPTH	4	0.027-0.038	0.032	0.0- 1.2	4	0.032-0.040	0.038	0.0- 1.5	3	0.006-0.015	0.008	0.0- 1.5
MAX DEPTH**	2	0.019-0.036	0.027	0.9- 3.4	2	0.029-0.038	0.033	1.5- 3.7	2	0.006-0.015	0.010	0.0- 2.7
NO2+NO3 (MG/L)												
0.-1.5 M DEPTH	4	0.460-0.580	0.495	0.0- 1.2	4	0.670-0.680	0.670	0.0- 1.5	3	0.700-0.980	0.720	0.0- 1.5
MAX DEPTH**	2	0.490-0.580	0.495	0.9- 3.4	2	0.510-0.670	0.590	1.5- 3.7	2	0.790-0.980	0.885	0.0- 2.7
AMMONIA (MG/L)												
0.-1.5 M DEPTH	4	0.060-0.090	0.070	0.0- 1.2	4	0.160-0.220	0.200	0.0- 1.5	3	0.040-0.040	0.040	0.0- 1.5
MAX DEPTH**	2	0.060-0.070	0.065	0.9- 3.4	2	0.160-0.470	0.315	1.5- 3.7	2	0.040-0.240	0.140	0.0- 2.7
KJELDAHL N (MG/L)												
0.-1.5 M DEPTH	4	0.300-0.400	0.400	0.0- 1.2	4	0.600-0.900	0.700	0.0- 1.5	3	0.300-0.600	0.300	0.0- 1.5
MAX DEPTH**	2	0.300-0.400	0.350	0.9- 3.4	2	0.700-0.900	0.800	1.5- 3.7	2	0.600-0.600	0.600	0.0- 2.7
SECCHI DISC (METERS)												
	2	1.1- 1.5	1.3		2	0.5- 0.6	0.6		2	0.9- 1.0	0.9	

* N = NO. OF SAMPLES
** MAXIMUM DEPTH SAMPLED AT EACH SITE
*** S = NO. OF SITES SAMPLED ON THIS DATE

B. Biological Characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera	Algal Units per ml
04/17/73	1. Navicula	1,577
	2. Melosira	681
	3. Stephanodiscus	430
	4. Asterionella	203
	5. Flagellates	167
	Other genera	347
	Total	3,405
07/22/73	1. Melosira	829
	2. Aphanizomenon	609
	3. Navicula	463
	4. Flagellates	317
	5. Fragilaria	171
	Other genera	389
	Total	2,778
10/02/73	1. Flagellates	14,505
	2. Melosira	6,484
	3. Cyclotella	1,003
	4. Stephanodiscus	535
	5. Coelastrum	267
	Other genera	468
	Total	23,262

2. Chlorophyll *a* -

Sampling Date	Station Number	Chlorophyll *a* (µg/l)
04/17/73	1	5.4
	2	12.1
07/22/73	1	9.2
	2	9.5
10/02/73	1	58.9
	2	43.1

C. Limiting Nutrient Study:

1. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc.(mg/l)	Inorganic N Conc.(mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.020	0.325	8.5
0.05 P	0.070	0.325	11.8
0.05 P + 1.0 N	0.070	1.325	24.1
1.00 N	0.020	1.325	9.7

2. Discussion -

The control yield of the assay alga, *Selenastrum capricornutum*, indicates that the potential for primary productivity was high in Pompton Lakes at the time of sampling. The lake was phosphorus limited at that time as indicated by the increased yield of the assay alga in response to an addition of orthophosphorus. Spikes with phosphorus and nitrogen simultaneously resulted in a maximum yield.

The N/P ratio of 18/1 in the spring lake chemical data further indicates phosphorus limitation. At all other sampling times the N/P ratio was 25/1 or greater, and phosphorus limitation also would be expected.

IV. NUTRIENT LOADINGS
(See Appendix D for data)

For the determination of nutrient loadings, the New Jersey National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the maps (pages v and vi), except for the high runoff month of March when two samples were collected. Sampling was begun in July 1973, and was completed in June 1974.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the New Jersey District Office of the USGS for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of the USGS computer program for calculating stream loadings. Nutrient loads indicated for tributaries are those measured minus known point source loads, if any.

Nutrient loadings for unsampled "minor tributaries and immediate drainage" ("ZZ" of USGS) were estimated by using the mean annual concentrations in Unnamed Stream at Station B(1) and mean annual ZZ flow.

The operators of the Ramapo College, Prime Equities, Blue Hills, Regency Park Apts., Skyview, Oakwood Knolls, Pompton Lakes Nursing-Convalescent, Holiday Inn (Fairlawn), Manito School (Oakland), Indian Hills High School, Swiss Chalet, Apex Co., Okonite Co., Nu-Car Carriers Inc., Hamiltonian Fidelity, Society Hills, U.S. Army Housing Area, Chan's Hawaiian Restaurant, and TriCorner Realty wastewater treatment plants provided monthly effluent samples and corresponding flow data. Nutrient loads for the city of Suffern wastewater treatment plant were estimated at 1.134 kg P and 3.401 kg N/capita/year.

Eleven other New York point sources exist which are known to impact the Ramapo River Basin area. These include Queen of Apostle College, Intercoast Development, Zukerman's Apartments, and Highland Telephone Co., all in the city of Monroe; Motel on the Mountain in Hilburn; the Ramapo-Sloatsburg plant in Sloatsburg; Tuxedo Village, Tuxedo Mt. View Apartments, and Tuxedo Park Sewage Treatment Plant, all in Tuxedo; the Indian Hill Plant and New York University Apartments, both at Sterling Forest Lake. These sources did not participate in the Survey so are not included in the nutrient budget on pages 14-15. It is expected, however, that the unusually high background loading for the Ramapo River is due, at least in part, to unmeasured contributions from these sources.

A. Waste Sources -

1. Known municipal -

Name	Population Served*	Treatment	Mean Flow ($m^3/d \times 10^3$)	Receiving Water
Ramapo College (Wayne)	3,500	Activated sludge	0.181	Ramapo River
Prime Equities (Mahwah)	1,225	Activated sludge	0.057	Ramapo River
Blue Hills (Mahwah)	105	Activated sludge	0.067	Ramapo River
Regency Park Apts. (Mahwah)	363	Activated sludge	0.070	Ramapo River
Skyview (Oakland)	300	Activated sludge	0.082	Ramapo River
Oakwood Knolls (Oakland)	240	Activated sludge	0.392	Ramapo River
Pompton Lakes Nursing-Convalescent	70	Sand filter	0.016	Ramapo River
Holiday Inn (Fairlawn)	200	Activated sludge	0.048	Ramapo River
Manito School (Oakland)	108	Activated sludge	0.016	Ramapo River
Indian Hills High School (Wycuoff)	1,100	Activated sludge	0.053	Ramapo River
Swiss Chalet (Ramsey)	65	Trickling filter	0.023	Ramapo River
Apex Corporation (Mahwah)	83	Sand filter	0.034	Ramapo River
Okonite Company (Ramsey)	149	Activated sludge	0.011	Ramapo River
Nu-Car Carriers Inc.	8	Activated sludge	0.006	Ramapo River
Hamiltonian Fidelity (Mahwah)	500	Activated sludge	0.110	Masoniuro Brook/ Ramapo
Society Hills (Mahwah)	56	Activated sludge	0.021	Darlington Brook/ Ramapo River
U.S. Army Housing Area	150	Trickling filter	0.105	Ramapo River
Chan's Hawaiian Restaurant	900 to 1,000	Activated sludge	0.037	Ramapo River
TriCorner Realty	9-store complex**	Sand filter	0.003	Ramapo River
Suffern Sewage Treatment Plant***	8,273	Trickling filter	1.131	Ramapo River

*Treatment plant questionnaire information.
**Small stores, each operated by owner.
***USEPA, 1971. Population shown is 1970 census, flow estimate is based on 0.3785 m^3/capita/day.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	kg P/yr	% of total
a. Tributaries (nonpoint load) -		
A(2) Ramapo River	28,000	70.5
B(1) Unnamed Stream	140	0.4
C(1) Unnamed Stream	135	0.3
b. Minor tributaries and immediate drainage (nonpoint load) -	135	0.3
c. Known municipal STP's -		
Ramapo College	130	0.3
Prime Equities	65	0.2
Blue Hills	115	0.3
Regency Park Apts.	90	0.2
Skyview	180	0.5
Oakewood Knolls	550	1.4
Pompton Lakes Nursing-Convalescent	20	0.1
Holiday Inn	175	0.4
Manito School	10	<0.1
Indian Hills High School	115	0.3
Swiss Chalet	130	0.3
Apex Corporation	70	0.2
Okonite Company	5	<0.1
Nu-Car Carriers Inc.	5	<0.1
Hamiltonian Fidelity	150	0.4
Society Hills	50	0.1
Suffern	9,380	23.6
U.S. Army Housing Area	50	0.1
Chan's Hawaiian Restaurant	20	0.1
TriCorner Realty	5	<0.1
d. Septic tanks* -	5	<0.1
e. Known industrial - none		
f. Direct precipitation** -	15	<0.1
Totals	39,745	100.0
2. Output - A(1) Ramapo River	16,100	
3. Net annual P accumulation	23,645	

*Estimate based on 22 lakeside residences.
**Estimated (see NES Working Paper No. 175).

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	kg N/yr	% of total
a. Tributaries (nonpoint load) -		
A(2) Ramapo River	431,620	89.4
B(1) Unnamed Stream	5,380	1.1
C(1) Unnamed Stream	4,040	0.8
b. Minor tributaries and immediate drainage (nonpoint load) -	5,255	1.1
c. Known municipal STP's -		
Ramapo College	990	0.2
Prime Equities	355	0.1
Blue Hills	275	0.1
Regency Park Apts.	410	0.1
Skyview	330	0.1
Oakwood Knolls	2,335	0.5
Pompton Lakes Nursing-Convalescent	105	<0.1
Holiday Inn	220	0.1
Manito School	55	<0.1
Indian Hills High School	575	0.1
Swiss Chalet	150	<0.1
Apex Corporation	185	<0.1
Okonite Company	55	<0.1
Nu-Car Carriers Inc.	30	<0.1
Hamiltonian Fidelity	880	0.2
Society Hills	170	<0.1
Suffern	28,135	5.8
U.S. Army Housing Area	190	<0.1
Chan's Hawaiian Restaurant	75	<0.1
TriCorner Realty	40	<0.1
d. Septic tanks* -	235	0.1
e. Known industrial - none		
f. Direct precipitation** -	895	0.2
Totals	482,985	100.0
2. Output - A(1) Ramapo River	327,150	
3. Net annual N accumulation -	155,835	

*Estimate based on 22 lakeside residences.
**Estimated (see NES Working Paper No. 175).

D. Mean Annual Non-point Nutrient Export by Subdrainage Area:

Tributary	kg P/km²/yr	kg N/km²/yr
A(2) Ramapo River*	72	1,110
B(1) Unnamed Stream	13	498
C(1) Unnamed Stream	29	878

E. Yearly Loads:

In the following table, the existing phosphorus loadings are compared to those proposed by Vollenweider (Vollenweider and Dillon, 1974). Essentially, his "dangerous" loading is one at which the receiving water would become eutrophic or remain eutrophic; his "permissible" loading is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic loading would be considered one between "dangerous" and "permissible".

Note that Vollenweider's model may not be applicable to water bodies with short hydraulic retention times.

	Total Yearly Phosphorus Loading (g/m²/yr)
Estimated loading for Pompton Lakes	47.89
Vollenweider's "dangerous" or eutrophic loading	3.60
Vollenweider's "permissible" or oligotrophic loading	1.80

* The background levels for the stream are probably inflated by unsampled point sources upstream (see page 12).

V. LITERATURE REVIEWED

Ketelle, J. M. and P. D. Uttormark. 1971. Problem Lakes in the United States. U.S. Environmental Protection Agency Project #16010 EHR. University of Wisconsin, Madison, Wisconsin.

U.S. Environmental Protection Agency. 1971. Inventory of Wastewater Treatment Facilities. Office of Media Programs, Office of Water Programs, Washington, D.C.

_____. 1975. National Eutrophication Survey Methods 1973-1976. Working Paper No. 175. Environmental Monitoring and Support Laboratory, Las Vegas, Nevada and Corvallis Environmental Research Laboratory, Corvallis, Oregon.

Vollenweider, R. A., and P. J. Dillon, 1974. The application of the phosphorus loading concept to eutrophication research. Natl. Res. Council of Canada Publ. No. 13690, Canada Centre for Inland Waters, Burlington, Ontario.

VI. APPENDICES

APPENDIX A

CONVERSION FACTORS

CONVERSION FACTORS

Hectares x 2.471 = acres

Kilometers x 0.6214 = miles

Meters x 3.281 = feet

Cubic meters x 8.107×10^{-4} = acre/feet

Square kilometers x 0.3861 = square miles

Cubic meters/sec x 35.315 = cubic feet/sec

Centimeters x 0.3937 = inches

Kilograms x 2.205 = pounds

Kilograms/square kilometer x 5.711 = lbs/square mile

APPENDIX B

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR NEW JERSEY 06/04/76

LAKE CODE 3410 POMPTON LAKE

TOTAL DRAINAGE AREA OF LAKE(SQ KM) 414.4

TRIBUTARY	SUB-DRAINAGE AREA(SQ KM)	NORMALIZED FLOWS(CMS) JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
3410A1	414.4	8.81	9.68	15.80	14.16	8.95	5.13	3.74	4.19	4.13	4.05	7.14	8.38	7.83
3410A2	388.5	9.29	9.54	16.06	14.19	8.27	4.90	3.51	4.02	4.05	5.35	7.42	9.09	7.96
3410B1	10.8	0.167	0.170	0.258	0.212	0.147	0.088	0.068	0.074	0.071	0.085	0.147	0.170	0.138
3410C1	4.6	0.057	0.057	0.099	0.079	0.048	0.025	0.018	0.019	0.018	0.024	0.048	0.057	0.046
3410ZZ	10.4	0.161	0.164	0.249	0.207	0.142	0.085	0.065	0.071	0.068	0.082	0.142	0.164	0.133

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 414.4
SUM OF SUB-DRAINAGE AREAS = 414.3

TOTAL FLOW IN = 99.49
TOTAL FLOW OUT = 94.07

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
3410A1	7	73	9.628	21	15.036				
	8	73	2.381	26	1.246				
	9	73	1.631	29	1.104				
	10	73	1.999						
	11	73	2.237	4	2.718				
	12	73	23.758	8	2.528				
	1	74	13.309	26	17.103				
	2	74	9.656	23	19.227				
	3	74	12.714	9	10.534	23	21.917		
	4	74	18.944	21	13.875				
	5	74	9.316	12	12.629				
	6	74	5.239	22	6.428				
3410A2	7	73	7.872	21	11.129				
	8	73	1.668	26	0.850				
	9	73	1.249	29	0.821				
	10	73	1.923						
	11	73	2.085	4	2.294				
	12	73	25.995	8	4.814				
	1	74	13.026	26	16.509				
	2	74	9.599	23	19.255				
	3	74	12.997	9	11.044	23	20.756		
	4	74	17.868	21	11.958				
	5	74	8.523	12	12.488				
	6	74	5.295	22	5.267				

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TRIBUTARY FLOW INFORMATION FOR NEW JERSEY 06/04/76

LAKE CODE 3410 POMPTON LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
341081	7	73	0.113	21	0.127				
	8	73	0.034	26	0.020				
	9	73	0.020	29	0.020				
	10	73	0.045						
	11	73	0.045	4	0.045				
	12	73	0.283	8	0.096				
	1	74	0.170	26	0.232				
	2	74	0.156	23	0.340				
	3	74	0.224	9	0.184	23	0.311		
	4	74	0.261	21	0.184				
	5	74	0.167	12	0.263				
	6	74	0.082	22	0.079				
3410C1	7	73	0.345	21	0.396				
	8	73	0.016	26	0.014				
	9	73	0.014	29	0.007				
	10	73	0.017						
	11	73	0.017	4	0.017				
	12	73	0.116	8	0.027				
	1	74	0.068	26	0.085				
	2	74	0.051	23	0.147				
	3	74	0.082	9	0.065	23	0.122		
	4	74	0.099	21	0.065				
	5	74	0.057	12	0.102				
	6	74	0.022	22	0.021				
3410ZZ	7	73	0.110	21	0.122				
	8	73	0.034	26	0.020				
	9	73	0.020	29	0.020				
	10	73	0.045						
	11	73	0.045	4	0.045				
	12	73	0.275	8	0.093				
	1	74	0.164	26	0.224				
	2	74	0.150	23	0.340				
	3	74	0.218	9	0.176	23	0.311		
	4	74	0.252	21	0.176				
	5	74	0.161	12	0.255				
	6	74	0.079	22	0.076				

APPENDIX C

PHYSICAL AND CHEMICAL DATA

STORET RETRIEVAL DATE 76/06/04

341001
40 59 45.0 074 16 33.0 3
POMPTON LAKES
34031 NEW JERSEY

013391

11EPALES 2111202
0015 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/04/17	10 00	0000	12.8		60	190	7.10	36	0.090	0.300	0.460	0.029
	10 00	0004	12.8	11.1		180	7.20	34	0.070	0.400	0.500	0.027
	10 00	0011	12.5	11.0		198	7.30	36	0.070	0.300	0.500	0.019
73/07/22	11 50	0000	22.1		24	182	7.10	49	0.220	0.900	0.680	0.038
	11 50	0005	21.5	5.8		178	7.00	49	0.220	0.600	0.670	0.032
	11 50	0012	21.3	3.2		198	7.08	58	0.470	0.980	0.510	0.029
73/10/02	13 05	0000	18.8		38	580	9.20	69	0.040	0.300	0.720	0.008
	13 05	0005	18.3	14.4		600	8.90	71	0.040	0.300	0.700	0.006
	13 05	0009	17.9	10.0		600	8.20	77	0.240	0.600	0.790	0.006

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/04/17	10 00	0000	0.054	5.4
	10 00	0004	0.054	
	10 00	0011	0.040	
73/07/22	11 50	0000	0.108	9.2
	11 50	0005	0.101	
	11 50	0012	0.142	
73/10/02	13 05	0000	0.058	58.9
	13 05	0005	0.070	
	13 05	0009	0.073	

STORET RETRIEVAL DATE 76/06/04

341002
41 00 27.0 074 16 29.0 3
POMPTON LAKES
34031 NEW JERSEY

013391

11EPALES 2111202
0005 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/04/17	10 30	0000	12.7		45	190	7.30	37	0.070	0.400	0.500	0.038
	10 30	0003	12.6	10.0		190	7.40	37	0.060	0.480	0.490	0.036
73/07/22	12 15	0000	21.9		20	180	7.20	48	0.180	0.700	0.670	0.040
	12 15	0005	21.0	7.2		178	7.20	48	0.160	0.700	0.670	0.038
73/10/02	13 20	0000	18.6	13.2	34	625	8.80	76	0.040	0.600	0.900	0.015

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DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/04/17	10 30	0000	0.059	12.1
	10 30	0003	0.060	
73/07/22	12 15	0000	0.116	9.5
	12 15	0005	0.135	
73/10/02	13 20	0000	0.101	43.1

APPENDIX D

TRIBUTARY AND WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 76/06/04

3410A1
40 59 33.0 074 16 47.0 4
RAMAPO RIVER
34 7.5 POMPTON PLAI
0/POMPTON LAKE 013391
2NDRY RD BRDG N OF US 202 JCT
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/07/21	08 45		0.430	0.970	0.132	0.009	0.075
73/08/26	09 00		0.430	1.470	0.129	0.015	0.050
73/09/29	09 00		0.680	1.470	0.160	0.011	0.067
73/11/04	09 00		0.700	1.000	0.168	0.039	0.085
73/12/08	09 00		0.570	0.400	0.088	0.044	0.095
74/01/26	09 30		0.616	0.500	0.095	0.020	0.030
74/02/23	09 00		0.756	0.700	0.110	0.020	0.065
74/03/09	09 00		0.600	0.400	0.035	0.020	0.065
74/03/23	08 20		0.420	0.400	0.045	0.010	0.050
74/04/21	08 30		0.540	0.500	0.050	0.017	0.025
74/05/12	09 00		0.560	0.800	0.080	0.035	0.085
74/06/22	09 00		0.520	0.700	0.080	0.020	0.100

STORET RETRIEVAL DATE 76/06/04

3410A2
41 01 00.0 074 15 43.0 4
RAMAPO RIVER
34 7.5 WANAQUE
1/POMPTON LAKE 013391
2NDRY RD BRDG N OF OAKLAND
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/07/21	09 10		0.750	1.380	0.390	0.063	0.200
73/08/26	09 10		1.040	3.570	0.088	0.042	0.082
73/09/29	09 15		1.480	0.880	0.160	0.078	0.105
73/11/04	09 15		0.870	0.450	0.105	0.069	0.090
73/12/08	09 15		0.580	0.500	0.088	0.040	0.080
	09 25		2.100	0.300	0.032	0.005K	0.045
74/01/26	09 55		0.650	0.300	0.125	0.040	0.045
74/02/23	09 15		0.660	0.700	0.165	0.100	0.195
74/03/09	09 10		0.610	0.400	0.095	0.065	0.125
74/03/23	08 40		0.528	0.800	0.230	0.720	0.800
74/04/21	08 45		0.450	2.000	0.065	0.022	0.030
74/06/22	09 15		0.860	0.800	0.110	0.050	0.105

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K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

341081
40 59 40.0 074 16 30.0 4
UNNAMED STREAM
34 7.5 POMPTON PLAI
T/POMPTON LAKE 013391
US 202 BRDG IN POMPTON
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/07/21	09 05		0.310	0.710	0.058	0.024	0.067
73/08/26	09 05		1.140	1.100	0.052	0.031	0.035
73/09/29	09 05		0.520	1.570	0.320	0.017	0.020
73/11/04	09 00		0.390	0.450	0.072	0.013	0.020
73/12/08	09 05		0.440	0.600	0.040	0.008	0.035
74/01/26	09 40		0.640	0.400	0.030	0.010	0.010
74/02/23	09 00		0.630	0.600	0.050	0.010	0.030
74/03/09	09 05		0.800	0.300	0.030	0.010	0.050
74/03/23	08 30		0.560	0.500	0.025	0.005	0.030
74/04/21	08 35		0.504	0.200	0.085	0.015	0.030
74/05/12	09 05		0.410	1.900	0.065	0.015	0.040
74/06/22	09 05		0.312	0.400	0.030	0.015	0.030

STORET RETRIEVAL DATE 76/06/04

3410C1
41 00 18.0 074 17 00.0 4
UNNAMED STREAM
34 7.5 MANAQUE
T/POMPTON LAKE 013391
2NDRY RD BRDG E EDGE OF LAKE IN POMPTON
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/07/21	09 25		2.800	0.820	0.110	0.011	0.055
73/08/26	09 15		1.200		0.052	0.024	0.035
73/09/29	09 25			0.160	0.160	0.016	0.030
73/11/04	09 25		4.600	0.300	0.021	0.048	0.080
74/01/26	10 40		0.640	2.000	0.065	0.005K	0.010
74/02/23	09 25		0.940	0.200	0.040	0.005K	0.015
74/03/09	09 25		2.200	0.200	0.025	0.005	0.030
74/03/23	08 50		0.630	0.500	0.020	0.005	0.015
74/04/21	08 55		0.300	0.800	0.040	0.010	0.040
74/05/12	09 25		0.790	3.100	0.200	0.015	0.650
74/06/22	09 25		3.200	0.400	0.050	0.040	0.070

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AA AS3410AA P003500
41 06 10.0 074 09 10.0 4
RAMAPO COLLEGE (WAYNE)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/07/03	11 00								
CP(T)-			7.800	8.200	0.015	1.150	1.200	0.035	0.033
73/07/03	16 00								
73/08/01	08 00								
CP(T)-			6.800	0.980	0.250	1.500	1.600	0.031	0.033
73/08/01	16 00								
73/09/01	07 00								
CP(T)-			7.600	1.100	0.294			0.029	0.030
73/09/01	16 00								
73/10/01	07 30								
CP(T)-			2.200	4.800	2.100	0.490	0.740	0.037	0.040
73/10/01	16 00								
73/11/03	08 00								
CP(T)-			2.100	13.500	4.500	0.720	1.050	0.040	0.042
73/11/03	16 00								
73/12/31	08 00								
CP(T)-			12.000	1.600	0.072	1.300	1.700	0.048	0.051
73/12/31	16 00								
74/01/02	11 00		10.100	0.500K	0.040K	1.440	1.500	0.054	0.048
74/01/29	08 00								
CP(T)-			6.720	8.250	2.200	1.440	2.700	0.053	0.055
74/01/29	16 00								
74/03/12	08 00								
CP(T)-			5.040	10.000	0.540	0.750	1.300	0.063	0.061
74/03/12	16 00								
74/04/15	08 00								
CP(T)-			8.200	11.000	0.370	1.575	2.300	0.073	0.066
74/04/15	16 00								
74/05/20	08 00								
CP(T)-			6.700	16.000	0.760	2.600	3.400	0.068	0.065
74/05/20	16 00								

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AB AS3410AB P001225
41 06 10.0 074 09 15.0 4
PRIME EQUITIES (MAHWAH)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/10/01	08 00		13.600	1.200	0.760	5.130	5.130	0.014	0.014
73/11/07	08 30		7.700	7.100	4.000	3.500	3.625	0.014	0.014
73/12/06	08 30		32.000	3.900	0.040K	3.895	4.000	0.016	0.016
74/01/13	08 30		22.000	1.000K	0.040K	5.100	5.400	0.015	0.015
74/02/10	08 30		6.800	1.000K	0.040K	0.081	0.110	0.015	0.015
74/03/07	08 00		18.400	2.900	0.190	4.700	4.800	0.015	0.015
74/04/10	07 00		14.400	1.000K	0.050K	0.740	0.830	0.015	0.015
74/05/05	08 30		7.600	1.000K	0.050K	0.100	0.160	0.015	0.015
74/06/10	08 00		11.800	1.000K	0.550	4.563	4.940	0.015	0.015

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AC AS3410AC P000105
41 06 10.0 074 09 15.0 4
BLUE HILLS (MAHWAH)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/10/02	06 30		11.600	2.750	0.040K	2.735	2.740	0.014	0.014
73/11/07	07 30		15.400	0.500K	0.100	6.500	6.875	0.014	0.014
73/12/06	07 30		14.000	1.200	0.025	6.800	7.100	0.015	0.015
74/01/08	07 30		6.000	1.200	0.040K	2.800	3.000	0.018	0.018
74/02/09	08 15		6.600	1.000K	0.095	1.800	1.900	0.020	0.020
74/03/07	07 00		5.400	1.000K	0.050K	1.700	1.750	0.018	0.018
74/04/10	08 30		11.000	1.000K	0.050K	4.400	4.900	0.020	0.020
74/05/05	08 00		15.100	1.250	0.110	6.800	7.200	0.019	0.019
74/06/10	06 30		7.400	1.000K	0.067	7.200	7.200	0.019	0.019

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AD AS3410AD P000363
41 06 10.0 074 09 15.0 4
REGENCY PARK APARTMENTS (MAHWAH)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/10/02	08 30		16.800	0.960	0.086	2.800	2.800	0.018	0.018
73/11/07	08 00		12.400	0.160	0.160	2.715	4.900	0.018	0.018
73/12/05	08 30		21.200	0.100K	0.070	2.800	3.900	0.018	0.018
74/01/15	08 00		4.700	15.000	4.400	2.900	3.500	0.018	0.018
74/02/10	08 30		5.200	8.600	3.000	2.200	2.400	0.018	0.018
74/03/07	08 30		11.200	1.800	0.520	3.750	3.900	0.018	0.018
74/04/10	08 00		23.000	1.400	0.050K	2.300	2.400	0.018	0.018
74/05/05	09 00		8.900	1.000K	0.058	3.500	3.700	0.019	0.019
74/06/10	07 00		11.000	1.000K	0.050K	3.750	4.000	0.019	0.019

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AE AS3410AE P000300
41 02 20.0 074 14 25.0 4
SKYVIEW (OAKLAND)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/27	10 10		10.700	0.110	0.034	6.500	7.480	0.019	0.022
73/08/01	14 30		4.200		0.046	3.400	4.100	0.017	0.022
73/08/31	11 30		4.600	0.110		3.000	3.100	0.019	0.021
73/10/05	14 30		14.000	7.330	0.092	7.325	7.350	0.015	0.020
73/11/05	10 30		16.200	0.580	0.185	6.950	7.500	0.019	0.022
73/12/11	11 00		11.400	0.650	0.046	4.500	4.500	0.019	0.022
74/02/27	10 00		8.600	2.000	1.000	5.750	7.600	0.022	0.023
74/03/25	11 00		9.700	1.000K	0.390	6.300	6.900	0.021	0.021
74/04/30	10 30		13.000	2.200	0.210	12.000	12.000	0.021	0.022
74/06/07	10 15		4.300	1.000K	0.001	2.250	2.400	0.022	0.023
74/07/18	13 00		5.880	0.200	2.400	2.000	2.000	0.020	0.021

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AF AS3410AF P000240
41 02 20.0 074 14 25.0 4
OAKWOOD KNOLLS (OAKLAND)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/27	10 30		5.400	0.100K	0.019	2.940	3.300	0.009	0.012
73/08/01	14 00		2.940	0.370	0.011	4.200	4.700	0.012	0.009
73/08/31	11 00			0.170		2.940	3.000	0.012	0.012
73/10/05	14 00		1.300	3.000	0.056	6.950	6.950	0.010	0.012
73/11/05	11 00		1.700	0.750	0.038	4.800	5.100	0.010	0.012
73/12/11	11 30		1.600	0.600	0.170	2.770	3.100	0.012	0.012
74/02/27	09 00		2.160	5.000	0.071	0.340	0.355	0.016	0.013
74/03/25	11 30		15.000	1.000K	0.070	3.400	3.900	1.000	1.000
74/04/30	11 00		5.000	1.700	0.150	2.900	3.900	0.020	0.018
74/06/07	11 00		2.170	1.000K	0.100K	0.128	0.128	0.018	0.019
74/07/18	11 00		20.000	1.000K	0.340	4.000	5.000	0.018	0.019

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AG SF3410AG P000070
41 00 57.0 074 16 10.0 4
POMPTON LAKES NURSING CONVALESCE
34 7.5 WANAQUE
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/07/04	09 00								
CP(T)- 73/07/04	17 30		7.200	6.000	0.310	3.600	4.200	0.004	0.004
73/09/12	08 00								
CP(T)- 73/09/12	16 00		21.000	1.100	0.105	2.400	2.630	0.004	0.004
73/10/03	08 00								
CP(T)- 73/10/03	15 30		16.000	2.900	0.091	2.405	2.500	0.004	0.004
73/11/07	09 00								
CP(T)- 73/11/07	16 00		14.000	0.500K	0.058	1.800	3.900	0.004	0.004
73/12/04	09 30								
CP(T)- 73/12/04	16 00		15.000	0.550	0.048	2.550	2.550	0.004	0.004
74/01/08	08 00								
CP(T)- 74/01/08	15 00		4.600	6.800	0.170	3.520	4.200	0.004	0.004
74/02/10	08 00								
CP(T)- 74/02/12	15 00		3.900	7.200	2.000	2.760	2.900	0.004	0.004
74/03/12	07 30								
CP(T)- 74/03/12	15 00		4.400	6.400	1.400	3.300	3.400	0.004	0.004
74/04/10	08 00								
CP(T)- 74/04/10	15 00		10.400	1.000K	0.100	2.450	2.600	0.004	0.004
74/05/08	07 30								
CP(T)- 74/05/08	18 00		6.100	19.000	0.660	3.700	5.700	0.004	0.004
74/06/12	08 00								
CP(T)- 74/06/12	15 00		37.000	7.000	2.100	4.100	4.400	0.004	0.004
74/07/14	09 00								
CP(T)- 74/07/14	19 00		7.200	5.300	0.250	3.450	4.800	0.004	0.004

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AH AS3410AH P000200
41 04 10.0 074 08 12.0 4
HOLIDAY INN (FAIRLAWN)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/29	15 40		2.100	5.800	0.920	7.500	7.700	0.012	0.013
73/07/28	09 00		1.700	13.000	3.900	7.800	9.700	0.013	0.011
73/11/06	14 00		6.900	2.350	0.098	4.900	5.100	0.013	0.013
73/12/08	10 00		5.800	15.500	3.200	14.700	16.500	0.013	0.013
74/03/02	09 00		15.200	1.600	0.500	7.400	9.700	0.013	0.013
74/04/27	09 00		2.400	3.700	0.480	12.500	14.000	0.013	0.013
74/05/11	09 00		6.160	1.200	0.200	9.200	9.400	0.013	0.013
74/08/04	11 00		4.800	12.000	1.550	6.800	7.300	0.013	0.013

STORET RETRIEVAL DATE 76/06/04

3410AJ AS3410AJ P000108
41 01 20.0 074 14 45.0 4
MANITO SCHOOL (OAKLAND)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/27	17 00		0.670	0.100K	0.021	0.185	0.250		0.005
73/08/01	15 00		0.690	1.300	0.130	0.190	0.280		
73/09/01	12 00			0.100K		0.510	0.537	0.0001	0.0002
73/10/02	17 00		3.000	21.500	12.600	0.100	0.500	0.004	0.005
73/11/06	08 00		1.050	0.100K	0.019	0.150	0.210	0.003	0.005
73/12/03	16 30		5.800	2.500	0.040K	3.360	4.100	0.005	0.004
74/01/04	12 00		2.320	0.500K	0.040K	0.130	0.147	0.005	0.005
74/03/02	11 00		1.360	0.600	0.050K	0.350	0.420		0.005
74/04/01	18 30		12.600	1.200	0.062	1.450	1.850	0.005	0.005
74/05/02	16 00		0.360	25.000	13.000	7.000	7.800	0.004	0.004
74/06/02	20 00		0.720	2.000	0.110	0.215	0.460		0.005
74/07/04	08 00		1.040	1.100	0.220	0.220	0.305		0.004

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AK AS3410AK P001100
41 01 20.0 074 14 45.0 4
INDIAN HILLS HIGH SCHOOL(NYCUOFF
34 7.5 RAMSEY
T/POMPTON LAKES 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/29	10 00								
CP(T)-			15.200	0.420	0.062	8.100	8.300	0.005	0.013
73/06/29	14 45								
73/08/29	07 30								
CP(T)-					0.022	1.220	1.280	0.008	0.008
73/08/29	13 30								
73/09/26	10 00		40.000		0.650	4.387	4.400	0.017	0.017
73/10/26			45.000	0.450	0.054	6.200	6.400	0.018	0.016
73/11/27	08 30		33.000	0.100K	0.097	5.300	5.300	0.017	0.017
73/12/21	23 00		14.000	0.630	0.480	6.200	6.800	0.018	0.015
74/01/25	14 00		25.200	1.300	0.680	7.200	7.200	0.018	0.017
74/02/26	07 30								
CP(T)-			28.000	1.600	0.380	6.300	6.500	0.017	0.016
74/02/26	14 30								
74/03/26	07 30								
CP(T)-			30.800	1.000K	0.670	4.600	4.700	0.016	0.016
74/03/26	13 30								
74/04/26	08 30								
CP(T)-			29.000	1.200	0.100	7.000	7.300	0.016	0.015
74/04/26	13 30								
74/05/24	08 00								
CP(T)-			26.000	1.000	0.110	7.200	7.800	0.015	0.014
74/05/24	13 00								
74/07/23	14 00		15.100	1.000K	0.100	2.400	2.500	0.004	0.004

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AL TF3410AL P000065
41 03 15.0 074 12 48.0 4
SWISS CHALET (RAMSEY)
34 7.5 RAMSEY
T/POMPTON LAKE 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/09/08	17 00		5.040	8.470	0.370			0.005	0.003
73/10/07	12 00		1.980	14.500	1.300	16.000	20.000	0.003	0.003
73/11/03	13 00		1.700	11.000	3.300	7.500	8.400	0.004	0.004
73/12/02	12 00		0.370	34.000	8.800	11.600	18.000	0.004	0.004
74/01/06	13 00		0.360	18.300	4.400	17.600	25.000	0.005	0.005
74/02/02	14 30		0.240	15.000	6.000	13.200	15.000	0.005	0.004
74/03/02	14 00		0.360	23.000	8.900	16.000	19.000	0.005	0.005
74/03/30	13 30		0.160	22.000	8.300	15.000	21.000	0.006	0.006
74/05/01	17 00		0.160	18.000	2.300	13.000	17.000	0.010	0.010
74/06/01	13 00		0.240	24.000	6.900	10.500	13.500	0.009	0.009
74/06/30	13 00		0.720	19.000	7.300	11.000	12.800	0.009	0.009
74/08/01	13 00		2.080	6.600	0.180	6.600	9.700	0.010	0.009
74/08/31	12 30		2.760	7.800	0.380	6.000	7.425	0.010	0.009

STORET RETRIEVAL DATE 76/06/04

3410AN SF3410AN P000083
41 04 50.0 074 11 00.0 4
APEX CORP. (MAHWAH)
34 7.5 RAMSEY
T/POMPTON LAKE 013391
RAMAPO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/09/28	10 30								
CP(T)-			0.880	2.800	0.083	1.600	3.750		
73/09/28	16 00								
73/11/01	10 00								
CP(T)-			1.260	5.700	0.047	0.830	2.300		
73/11/01	15 30								
74/01/16	10 00								
CP(T)-			1.680	16.000	4.600		7.350	0.009	
74/01/16	17 00								
74/02/15	10 00								
CP(T)-			0.360	13.000	4.100	2.650	4.600	0.009	
74/02/15	14 00								
74/03/15	09 00		0.320	11.000	0.610	1.250	3.850		0.009
74/04/15	10 00								
CP(T)-			0.600	17.000	4.800	2.100	6.100		0.009
74/04/15	14 00								

STORET RETRIEVAL DATE 76/06/04

3410AP AS3410AP P000149
41 04 38.0 074 08 30.0 4
OKONITE COMPANY (RAMSEY)
34 7.5 RAMSEY
T/POMPTON LAKE 013391
RAMPOO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
74/02/21			10.100	1.000K	0.040K	1.280	1.400		
74/03/06			13.600	1.700	0.390	3.600	3.700		
74/04/17			9.400	1.000K	0.061	1.800	1.850		0.003
74/05/15			18.000	2.500	0.730	2.200	2.700		0.003
74/06/04			7.500	1.900	0.050K	1.050	1.050		0.003
74/07/17			11.800	0.300	5.900	1.050	1.150		0.003
74/08/14			12.000	1.300	0.050K	2.800	3.100		0.003
74/09/11			10.600	0.500K	0.050K	1.150	1.150		0.003
74/10/11			8.200	1.000K	0.025K	2.800	3.200		0.003
74/11/11			12.400	1.000K	0.086	1.350	1.350		0.003
74/12/10			18.400	3.100	1.050	3.750	1.900		0.002
75/01/10			7.000	0.674	0.120	0.780	0.800		0.003

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AR AS3410AR
41 04 25.0 074 11 49.0 4
CHAN'S HAWII RESTRAUNT
34 7.5 RAMSEY
T/POMPTON LAKE 013391
RAMPOO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
74/01/02	10 00		1.240	5.600	0.210	5.240	7.900		0.009
74/02/21			2.760	1.000K	0.040K	0.650	0.740		0.009
74/03/06			3.000	1.900	0.050	0.970	1.250		0.009
74/04/17			3.520	1.000K	0.050K	0.240	0.140		0.010
74/05/15			2.900	1.400	0.110	0.800	1.100		0.010
74/06/04			3.100	2.200	0.050K	0.495	0.630		0.010
74/07/17			4.000	2.700	0.130	0.930	2.600		0.010
74/08/14			1.560	5.300	0.050K	0.650	0.890		0.009
74/09/11			1.040	3.000	0.220	1.300	1.800		0.010
74/10/11			5.280	1.400	0.100	0.400	0.760		0.009
74/11/11			4.400	5.500	0.100	2.400	3.200		0.009
74/12/10			4.320	2.300	0.073	0.400	0.780		0.009
75/01/10			1.680	1.000K	0.050K	0.094	0.100K		0.010

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410AT AS3410AT P000008
41 04 25.0 074 11 49.0 4
NU-CAR CARRIERS INCORPORATE
34 7.5 RAMSEY
T/POMPTON LAKE 013391
RAMPOO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
74/01/02	10 30		10.900	0.500K	0.040K	1.240	1.250		0.001
74/02/21			9.240	4.500	4.500	1.360	1.450		0.001
74/03/06			13.000	2.800	1.800	1.450	1.550		0.001
74/04/17			11.800	1.000K	0.420	0.930	1.000		0.002
74/05/15			11.200	1.000K	0.050K	0.860	1.000		0.002
74/06/04			10.400	1.500	0.050K	0.875	0.875		0.002
74/07/17			24.000	1.000K	0.061	1.720	1.870		0.001
74/08/14			8.000	3.100	0.050K	0.530	0.580		0.001
74/09/11			11.000	0.500K	0.050K	0.940	0.970		0.001
74/10/11			16.000	1.000K	0.330	1.330	1.330		0.001
74/11/11			13.200	1.000K	0.050K	1.500	1.500		0.001
74/12/10			12.800	1.400	0.050K	1.050	1.400		0.001
75/01/10			1.840	1.000K	0.050K	0.300	0.310		0.001

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410XA AS3410XA P000500
41 05 50.0 074 08 15.0 4
HAMILTONIAN FIDELITY(HAMWAM)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
MASONICVS BROOK
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/07/16	09 15		2.400	34.000	21.000	4.500	4.900	0.033	0.040
73/08/15	11 00		8.600	1.400	0.650	3.400		0.040	0.032
73/09/15	10 30		10.500	1.200	0.220	3.760	3.900	0.040	0.041
73/10/19	10 00		25.000	4.590	0.020	4.581	4.700	0.026	0.030
73/11/17	09 00		3.570	17.500	15.000	3.570	4.000	0.003	0.003
73/12/17	16 45		16.200	4.300	0.800	2.900	2.900	0.040	0.032
74/01/15	09 00		1.040	19.000	0.540	2.500	2.900	0.033	0.031
74/02/15	10 00		5.000	16.000	9.800	3.100	3.100	0.040	0.038
74/03/15	08 30		0.040	28.000	0.230		3.300	0.040	0.031
74/04/15	10 00		10.600	4.500	2.400	3.300	4.100	0.004	0.043
74/05/16	09 00		0.156	38.000	24.000	4.500	5.600	0.037	0.022
74/06/17	09 30		24.500	8.300	5.100	3.100	3.400	0.004	0.003
74/07/15	10 00		1.320	6.400	0.200	3.100	3.300	0.037	0.033

STORET RETRIEVAL DATE 76/06/04

3410YA AS3410YA P000056
41 04 20.0 074 10 50.0 4
SOCIETY HILLS (MAHWAH)
34 7.5 RAMSEY
T/POMPTON LAKES 013391
DARLINGTON BROOK
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/07/16	14 00		21.000	0.230	0.126	3.720	3.825	0.006	0.006
73/08/17	17 00		16.200		0.100	4.000		0.006	0.005
73/09/16	14 00		27.200	0.500K	0.105	9.350	9.550	0.005	0.006
73/10/19	09 30		27.000	0.100K	0.017	12.600	15.700	0.005	0.006
73/11/17	08 45		4.100	24.000	12.000	10.400	12.300	0.006	0.001
73/12/17	16 00		4.200	17.000	2.730	3.200	4.500	0.005	0.005
74/01/15	10 30		1.680	27.000	12.000	6.000	8.400	0.006	0.005
74/02/15	11 45		4.000	17.000	7.700	4.200	4.400	0.006	0.005
74/03/16	09 00		0.920	30.000	23.000	7.000	8.500	0.006	0.005
74/04/15	11 00		0.760	6.800	5.200	4.100	4.900	0.005	0.006
74/05/16	11 30		5.880	5.100	0.450	3.600	4.200	0.006	0.008
74/06/17	11 45		24.500	6.200	3.750	3.000	3.000	0.007	0.006
74/07/15	11 30		12.000	3.400		5.900	5.900	0.007	0.006

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410ZA TF3410ZA P000150
41 04 25.0 074 11 49.0 4
US ARMY HOUSING AREA
34 7.5 RAMSEY
T/POMPTON LAKE 013391
STREAM LEADING TO RAMPOO RIVER
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/12/07	10 00		0.920	1.430	0.690	0.360	0.630	0.005	0.005
74/01/10	11 00		0.200	6.000	0.130	1.500	1.800	0.007	0.008
74/02/07	11 00		0.480	6.600	4.000	1.760	2.100	0.007	0.006
74/03/07	12 00		0.480	3.400	2.300	1.530	1.650	0.010	0.010
74/04/09			0.280	5.300	3.225	0.900	0.985	0.010	0.010
74/05/07	10 00		0.440	14.000	5.900	2.850	3.600	0.010	0.010
74/06/10	10 00		0.200	8.300	4.300	2.000	2.400	0.010	0.010
74/07/08			0.600	8.600	3.800	1.075	1.350	0.010	0.010
74/08/08	12 00		0.320	2.000	0.450	0.700	0.930	0.010	0.010
74/09/10			0.320	0.500K	0.090	0.210	0.220	0.010	0.070
74/10/08	10 00		0.280	1.300	0.530	0.500	0.570	0.010	0.070
74/11/08	12 00		0.240	1.000K	0.050K	0.218	0.279	0.010	0.070
74/12/06	11 30		0.400	1.400	0.089	0.600	0.300	0.010	0.070

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/06/04

3410Z8 SF3410Z8
41 00 43.0 074 11 41.0 4
TRI-CORNER REALTY
34 7.5 RAMSEY
T/POMPTON LAKE 013391
PAULIS POND TO RAMPOO RIVE R
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
74/01/02	09	30	1.400		12.600	1.600	3.000		
74/02/21			0.280	23.000	13.000	1.280	2.300		
74/03/06			0.240	29.000	16.000	3.400	4.800		
74/04/17			0.280	32.000	24.000	4.400	6.600		0.001
74/05/15			0.153	37.000	22.000	4.750	6.900		0.001
74/06/04			0.400	42.000	22.000	4.700	5.900		0.001
74/07/17			0.120	35.000		3.600	4.900		0.001
74/08/14			0.588	30.000	15.700	3.300	4.100		0.001
74/09/11			0.280	25.000	6.400	2.200	3.670		0.001
74/11/08			0.240	27.000	19.000	2.200	4.100		0.001
74/12/10			0.320	34.000	21.000	4.000	7.200		0.001
75/01/10			0.480	31.000	16.000	3.150	4.650		0.001

APPENDIX E

PARAMETRIC RANKINGS OF LAKES SAMPLED BY NES IN 1973

STATE OF NEW JERSEY

LAKE DATA TO BE USED IN RANKINGS

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P
3402	BUDD LAKE	0.082	0.205	474.000	48.500	7.400	0.012
3403	GREENWOOD LAKE	0.021	0.100	414.250	11.920	14.800	0.007
3406	OWADELL RESERVOIR	0.055	0.990	462.500	22.267	13.600	0.008
3409	PINECLIFF LAKE	0.070	0.175	465.500	38.960	11.000	0.011
3410	POMPTON LAKES	0.071	0.795	463.167	23.033	11.800	0.029
3412	DUHERNAL LAKE	0.082	1.420	466.667	6.800	8.600	0.010
3413	FARRINGTON LAKE	0.055	0.770	462.000	8.283	14.400	0.012
3415	LAKE HOPATCONG	0.022	0.120	416.333	13.627	14.900	0.007
3417	LAKE MUSCONETCONG	0.036	0.140	436.000	11.067	6.000	0.010
3419	PAULINS KILL LAKE	0.133	0.950	460.500	7.017	9.000	0.065
3420	SPRUCE RUN RESERVOIR	0.020	0.470	428.667	15.333	15.000	0.007
3422	UNION LAKE	0.063	1.150	463.200	22.080	12.800	0.018
3423	WANAQUE RESERVOIR	0.014	0.120	355.333	7.111	14.800	0.005

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P	INDEX NO
3402	BUDD LAKE	12 (1)	58 (7)	0 (0)	0 (0)	92 (11)	29 (3)	191
3403	GREENWOOD LAKE	83 (10)	100 (12)	92 (11)	58 (7)	21 (2)	83 (9)	437
3406	ORADELL RESERVOIR	54 (6)	17 (2)	42 (5)	25 (3)	42 (5)	67 (8)	247
3409	PINECLIFF LAKE	33 (4)	67 (8)	17 (2)	8 (1)	67 (8)	42 (5)	234
3410	POMPTON LAKES	25 (3)	33 (4)	33 (4)	17 (2)	58 (7)	8 (1)	174
3412	DUHERNAL LAKE	12 (1)	0 (0)	8 (1)	100 (12)	83 (10)	58 (7)	261
3413	FARRINGTON LAKE	54 (6)	42 (5)	50 (6)	75 (9)	33 (4)	29 (3)	283
3415	LAKE HOPATCONG	75 (9)	87 (10)	83 (10)	50 (6)	8 (1)	83 (9)	386
3417	LAKE MUSCONETCONG	67 (8)	75 (9)	67 (8)	67 (8)	100 (12)	50 (6)	426
3419	PAULINS KILL LAKE	0 (0)	25 (3)	58 (7)	92 (11)	75 (9)	0 (0)	250
3420	SPRUCE RUN RESERVOIR	92 (11)	50 (6)	75 (9)	42 (5)	0 (0)	83 (9)	342
3422	UNION LAKE	42 (5)	8 (1)	25 (3)	33 (4)	50 (6)	17 (2)	175
3423	WANAQUE RESERVOIR	100 (12)	87 (10)	100 (12)	83 (10)	21 (2)	100 (12)	491

LAKES RANKED BY INDEX NOS.

RANK	LAKE CODE	LAKE NAME	INDEX NO
1	3423	WANAQUE RESERVOIR	491
2	3403	GREENWOOD LAKE	437
3	3417	LAKE MUSCONETCONG	426
4	3415	LAKE HOPATCONG	386
5	3420	SPRUCE RUN RESERVOIR	342
6	3413	FARRINGTON LAKE	283
7	3412	OUWERNAL LAKE	261
8	3419	PAULINS KILL LAKE	250
9	3406	ORADELL RESERVOIR	247
10	3409	PINECLIFF LAKE	234
11	3402	BUDD LAKE	191
12	3422	UNION LAKE	175
13	3410	POMPTON LAKES	174